

### SUPPORT FOR THE AMENDMENTS

This Amendment amends Claims 1, 4-14 and 16-17. Support for the amendments is found in the specification and claims as originally filed. Particularly, support for Claim 1 is found in the specification at least at page 4, line 27 and page 7, lines 24 ("bonded covalently"). Support for Claims 10 and 14 is found in Claim 1. No new matter would be introduced by entry of these amendments.

Upon entry of these amendments, Claims 1-17 will be pending in this application. Claims 1, 6 and 9 are independent.

### REQUEST FOR RECONSIDERATION

Applicants respectfully request entry of the foregoing and reexamination and reconsideration of the application, as amended, in light of the remarks that follow.

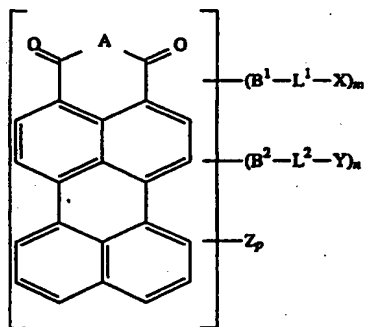
Applicants thank the Examiner for the indication that independent Claim 6 would be allowable if rewritten to overcome a rejection under 35 U.S.C. § 112, second paragraph, and that Claims 7-8 would be allowable if rewritten in independent form and to overcome the rejection under 35 U.S.C. § 112, second paragraph, and an objection. Office Action at page 6, sections 8-9. However, as discussed below, Applicants respectfully submit that all of the pending claims are allowable.

Pigment dispersants comprising the perylene derivatives according to the present invention are notable for their outstanding coloristic and rheological properties, high flocculation stability, high transparency, ready dispersibility, good gloss characteristics, high color strength, excellent fastness to overcoating and to solvent, and very good weather fastness. They are suitable for use both in solvent and in aqueous systems, i.e., they can be optimized for both solvent and for aqueous systems. Moreover, the pigment preparations prepared in accordance with the invention can be used as colorants for pigmenting high

molecular mass organic materials of organic or synthetic origin in the form of plastic masses, melts, spinning solutions, varnishes, paints, toners or printing inks. The pigment preparations of the invention are suitable in general for producing pigment dispersions, preferably paint materials, more preferably high-solids acrylic resin baking enamels, and solvent- or water-based paint pastes.

Claims 1-5 and 9-17 are rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,472,494 ("Hetzenegger").

Hetzenegger discloses pigment preparations containing (a) at least one organic pigment, and (b) as dispersant, at least one perylene derivative of the following general formula



where

A is  $-\text{O}-$ ,  $-\text{CH}_2-$  or  $-\text{NR}^1-$ ;

B<sup>1</sup> and B<sup>2</sup> are independently of each other a chemical bond,  $-\text{O}-$ ,  $-\text{CH}_2-$ ,  $-\text{NR}^2-$ ,  $-\text{S}-$ ,  $-\text{CO}-$ ,  $-\text{SO}_2-$  or  $-\text{SO}_2-\text{NH}-$ ;

L<sup>1</sup> and L<sup>2</sup> are independently of each other a chemical bond, phenylene or C<sub>1</sub>-C<sub>8</sub>-alkylene;

X is  $-\text{SO}_3^{\ominus}\text{Ka}^{\oplus}$ ;

Y is  $-\text{CO}_2\text{Ka}^{\oplus}$ ;

Z is chlorine or bromine;

m is from 0 to 4;

n is 0 or 1 and (m+n) is from 1 to 4; and

p is from 0 to 4

The perylene derivatives of Hetzenegger are at least singly substituted, the substituent being composed of an anionic radical satisfied with a cation  $\text{Ka}^+$ . Thus, Hetzenegger discloses perylene derivatives that are salts.

In contrast to Hetzenegger's salts, the present invention encompasses a perylene derivative of the formula (I) (see Claim 1, above) with at least one -(Y-X) functionality (Y corresponds to Hetzenegger's X and Y), where X is ***bonded covalently*** to Y and to the perylene derivative.

However, Hetzenegger's salts fail to suggest the independent Claim 1 limitation that "the predominantly sterically stabilizing and/or electrostatically stabilizing substituent [i.e., X] is/are bonded covalently to the perylene derivative".

The chemical behaviors of Hetzenegger's salts differ considerably from the compounds of the present invention comprising covalent structures. Especially in aqueous systems the behaviors of both systems differ (e.g., with respect to dissociation). Hetzenegger fails to suggest that exclusively covalent structures can be used as dispersants.

Hetzenegger's pigment dispersants exhibit some coloristic and some rheological deficiencies. In aqueous media the pigment dispersants have a low pH, which in certain applications of the pigment preparations is a drawback.

In contrast to this, the perylene derivatives of the present invention are easy and inexpensive to prepare and the pigment preparations of the invention are distinguished by good performance properties. Thus, they bring about high dispersibility and flocculation stability in the application medium and, furthermore, outstanding gloss and outstanding coloristics. The rheological properties of the pigment can be enhanced through the use of the pigment dispersants of the invention.

Because Hetzenegger fails to suggest all the limitations of independent Claim 1, the rejection over Hetzenegger should be withdrawn.

Claims 9-17 are rejected under 35 U.S.C. § 112, first paragraph, because assertedly the specification does not reasonably provide enablement for a compound comprising of a parent structure and at least one substituent covalently bonded to said structure. To obviate

the rejection, independent Claim 9 is amended to specify that the structure is "a perylene derivative".

Claims 1-17 are rejected under 35 U.S.C. § 112, second paragraph. To obviate the rejection, the claims are amended. However, Applicants respectfully traverse certain aspects of the rejection.

With respect to Claim 1, the phrase "the amine function" finds antecedent support in "alkylamine". Claim 1 recites "alkylamine, in which the amine function may carry one or more further substituents and may be part of a polyamine".

With respect to Claim 4, the phrase "the electrostatically stabilizing radicals" finds antecedent support in Claim 1, from which Claim 4 depends. Claim 1 recites "X, each identical or different, is a predominantly sterically stabilizing and/or electrostatically stabilizing substituent". Thus, Claim 4 covers a special mode of the subject matter of Claim 1 and characterizes the electrostatically stabilizing substituent further as it may comprise ammonium groups and/or protonatable amino groups.

With respect to Claim 5, the phrase "the carbon chain" finds antecedent support in Claim 5. Claim 5 recites "X is C<sub>1</sub>-C<sub>30</sub> alkyl or C<sub>3</sub>-C<sub>30</sub> alkenyl, it being possible for the carbon chain to be interrupted in each case by one or more groups ...". The C<sub>1</sub>-C<sub>30</sub> alkyl or C<sub>3</sub>-C<sub>30</sub> alkenyl groups comprise carbon chains with 1-30 carbon atoms. Thus, Claim 5 provides antecedent support for the phrase "the carbon chain".

With respect to Claim 9, the phrase "the substituent or substituents" finds antecedent support in Claim 9. Claim 9 recites a "pigment preparation comprising (a) at least one organic pigment and (b) at least one compound composed of a parent structure and at least one substituent covalently bonded to said structure, the structure being a perylene derivative, and the substituent or substituents being able to exert a sterically and/or electrostatically stabilizing effect on a pigment; as pigment dispersant". The parent structure is a perylene

derivative and the at least one substituent is able to exert a sterically and/or electrostatically stabilizing effect on a pigment. Thus, the Claim 9 recitation "at least one substituent" provides antecedent support for the phrase "the substituent or substituents".

With respect to Claim 11, the phrases "the sterically stabilizing radicals" and "the electrostatically stabilizing radicals" find antecedent support in Claim 9, from which Claim 11 depends. Claim 9 describes a pigment preparation comprising a compound composed of a parent structure and at least one substituent covalently bonded to the structure. According to Claim 9 the substituents are able to exert a sterically and/or electrostatically stabilizing effect on a pigment. Claim 11 further defines the subject matter of Claim 9 by limiting the amount of the sterically stabilizing radical (substituent) and/or of an electrostatically stabilizing radical (substituent).

With respect to Claim 12, the phrase "the pigments" finds antecedent support in Claim 9, from which Claim 12 depends. Claim 9 recites "at least one organic pigment".

With respect to Claim 13, the phrase "the substituent or substituents" finds antecedent support in Claim 13. Claim 13 covers a process for the production of a pigment preparation wherein the preparation comprises at least one organic pigment and at least one compound comprising a parent structure and at least one substituent covalently bonded to said parent structure. The parent structure is a perylene derivative and the at least one substituent is able to exert a sterically and/or electrostatically stabilizing effect on a pigment. Thus, the phrase "the substituent or substituents" finds antecedent support in the Claim 13 recitation "at least one substituent covalently bonded to said structure".

With respect to Claim 15, the phrase "the organic pigment" finds antecedent support in Claim 13, from which Claim 15 depends. Claim 13 recites "mixing at least one compound, as pigment dispersant, ... and the organic pigment ". Thus, the phrase "the organic pigment" in Claim 15 finds antecedent support in Claim 13.

Because the claims meet the requirements of 35 U.S.C. § 12, second paragraph, the rejection should be withdrawn.

Claims 8, 10 and 14 are objected to under 35 U.S.C. § 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim and also because multiple dependent claims must refer to other claims in the alternative only. To obviate the rejection, the claims are amended.

The Office Action at page 7, section 11, requests English-language equivalents of the foreign references cited in the specification at page 7, line 30. Attached is a copy of U.S. Patent No. 5,958,129, which corresponds to EP-A 0 864 613. Also attached is U.S. Patent No. 6,413,309, which corresponds to DE-A 199 02 907. U.S. Patent No. 6,409,816, which corresponds to EP-A-1 029 899, was submitted in the Information Disclosure Statement filed March 24, 2004.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Applicants respectfully request favorable consideration and prompt allowance of the application.

Should the Examiner believe that anything further is necessary in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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Attached:

U.S. Patent No. 5,958,129 (corresponding to EP-A 0 864 613)  
U.S. Patent No. 6,413,309 (corresponding to DE-A 199 02 907)

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